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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/212,203	12/15/1998	T. ALLAN HAMILTON	CLB7-B93	8736

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EXAMINER

PHAN, HANH

ART UNIT	PAPER NUMBER
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2633

DATE MAILED: 06/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/212,203

Applicant(s)  
HAMILTON et al

Examiner  
Hanh Phan

Art Unit  
2633



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Dec 15, 1998.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-18 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8 and 14-17 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 9-13, and 18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

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### DETAILED ACTION

1. This Office Action is responsive to the Amendment filed on 03/29/2002.
2. In claim 9, the phrases “ A improved method ” and “ in a infrared transceiver system ” should be changed to --An improved method -- and -- in an infrared transceiver system --.

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 4, 9, and 10 are rejected under 35U.S.C.103(a) as being unpatentable over Jackson (U.S.Patent number 5,714,909, cited by applicant) in view of Inami et al (U.S.Patent number 5,612,810).

Regarding claim 1, referring to Figure 2, Jackson teaches an improved infrared transceiver system comprising: a first sensor (12)(i.e., photodiode)(Fig. 2, col. 1, lines 59-60) for detecting infrared signals incident thereon and converting said signals to an electrical current signal; a gain controller (first stage 14)(Fig. 2, col. 1, lines 60-66) for amplifying said current signals; a voltage converter (32)(Fig. 2) for converting said current signals into voltage signals (col. 2, lines 1-21, col. 3, lines 1-48).

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Jackson differs from claim 1 in that he does not disclose staged current amplification means in circuit between said gain control means and said voltage conversion means, said staged current amplification means comprised of at least two amplification stages, each said stage amplifying said current signals. However, Inami teaches staged current amplification means (30, 70)(i.e., first stage main amplifier, second stage main amplifier)(Fig. 9) comprised of at least two amplification stages, each said stage amplifying said current signals (col. 4, lines 27-45, and col. 6, lines 30-44) . Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the staged amplification means as taught by Inami in the system of Jackson in order to amplify the signals.

Regarding claim 4, the combination of Jackson and Inami teaches the gain controller comprises a current mirror in operative connection with said staged current amplification means (Fig. 1 of Jackson and Fig. 9 of Inami).

Regarding claim 9, referring to Fig. 1, Jackson teaches an improved method for detecting and amplifying incident wireless signals, said method being implemented in an infrared transceiver system comprising a signal detector (12)(Fig. 1), a voltage converter (col. 3, lines 1-48), and a signal amplifier (Fig. 1), said method comprising the steps of: said signal detector converting said incident wireless signals into electrical current signals; and said amplifier amplifying said electrical current signals.

Jackson differs from claim 9 in that he does not disclose said staged current amplification means comprised of at least two amplification stages, each said stage amplifying said current

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signals. However, Inami teaches staged current amplification means (30, 70)(i.e., first stage main amplifier, second stage main amplifier)(Fig. 9) comprised of at least two amplification stages, each said stage amplifying said current signals (col. 4, lines 27-45, and col. 6, lines 30-44) . Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the staged amplification means as taught by Inami in the system of Jackson in order to amplify the signals. said amplifying step comprising at least two stages of amplification of said current signals.

Regarding claim 10, the combination of Jackson and Inami teaches each said stage of amplifying comprises amplifying said current signals in a transistor operating in the weak inversion range (Fig. 1 of Jackson and Fig. 9 of Inami).

5. Claims 11-13 and 18 are rejected under 35U.S.C.103(a) as being unpatentable over Jackson (U.S.Patent number 5,714,909, cited by applicant) in view of Umezawa et al (U.S.Patent number 6,034,567).

Regarding claims 11, 12, and 18, referring to Figure 2, Jackson teaches an improved wireless signal receiver system, comprising: a first sensor (12)(i.e., photodiode)(Fig. 2, col. 1, lines 59-60) for detecting wireless signals incident thereon and converting said signals to an electrical current signal; a gain controller (first stage 14)(Fig. 2, col. 1, lines 60-66) for amplifying said current signals; a voltage converter (32)(Fig. 2) for converting said current signals into voltage signals (col. 2, lines 1-21, col. 3, lines 1-48).

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Jackson differs from claims 11, 12, and 18 in that he does not specifically teach one transistor means operating in the weak inversion range. However, Umezawa teaches one transistor means operating in the weak inversion range (col. 5, lines 27-28). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the staged amplification means as taught by Inami in the system of Jackson in order to reduce the power source voltage and the power consumption.

Regarding claim 13, the combination of Jackson and Umezawa teaches the gain controller comprises a current mirror in operative connection with said staged current amplification means (Fig. 1 of Jackson and col. 5 of Umezawa, lines 5-28).

6. Claims 5-8 and 14-17 are allowed.

7. Applicant's arguments with respect to claims 1 and 4-18 have been considered but are moot in view of the new ground(s) of rejection.

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Holcombe (U.S. Patent number 6,356,375) teaches apparatus and method for an integrated photodiode in an infrared receiver.

Hatakeyama et al (U.S. Patent number 6,018,407) teaches optical receiver circuit.


### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (703)306-5840.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (703)305-4729. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.

  
LESLIE PASCAL  
PRIMARY EXAMINER